

Development Of E-Comic Based Learning Media On Large And Unit Materials To Increase Student Learning Motivation

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Abstract

This study aims to determine the perception and feasibility of e-comics that will be developed to increase the learning motivation of high school students. This research is a follow-up research that has been carried out previously which is only up to the analysis stage. The research method carried out is R n D with the ADDIE model which has five stages, namely; analysis stage (analysis); design ; development ; implementation (use); evaluation, but this research is only carried out until the development stage. The assessment instrument used in this study is an expert validation sheet consisting of several aspects, namely; material aspects, language aspects, and media aspects. Based on the results of the product validation test from the validator, a percentage of the score was obtained 92.5% for the material aspect, 90% for the language aspect, 82.4% for the media aspect, and 77.08% for the motivation aspect so that the total average score is 90% which is included in the very decent category. The results of the student perception response showed a good response with a percentage of 78.94%. Thus E-Comics material of Magnitude and Units to Increase Motivation of High School Students becomes a product worthy of use.

Keywords: Development Research, Learning Media, E-Comics, Learning Motivation, Quantity and Unit

A. Introduction

The spread of the Covid-19 outbreak is almost in every country around the world. This Covid-19 virus is a virus that spreads very quickly and is a deadly virus, therefore several countries are busy with policies as an effort to tighten the chain of spread of the Covid-19 virus, one of which is Indonesia. These policies have made major changes, such as the economic, health, and education sectors. The existence of these problems requires to make improvements, adjustments and updates in teaching and learning activities during the Covid-19 pandemic [1].

In the field of education, through the Ministry of Education and Culture (Kemendikbud) the government is trying to continue to be able to organize a teaching and learning system during this pandemic even though in a different way. The Ministry of Education and Culture encourages the implementation of the teaching and learning process to be carried out online. The implementation of online learning provides its own challenges for educational actors, such as educators, students, institutions and even parents and the wider community. In this online learning, educators are required to be able to deliver learning materials and can be easily accepted by students. Not only educators, students are also required to be able to adjust to the situations and conditions in this online learning [2].

The implementation of online learning cannot be separated from the role of technology. Technology can facilitate various needs in the teaching and learning process. Digital technology in educational institutions as supporting advice in the learning process, both as advice for accessing learning resource information and as a means of supporting teaching and learning activities [2]. Learning media has a function as a stimulus between teachers and students, to convey messages from sources in a planned manner so that learning can be more conducive. The learning media created must be in accordance with the existing curriculum so that the objectives of the learning can be carried out optimally. Effective learning can be created using media designs that are in accordance with the curriculum used [3].

There is an appeal for educators to do fun learning from home, thus making it difficult for teachers to deliver material without learning media. Every teacher's learning is required to be able to create interesting, creative

and innovative learning media that can motivate students to learn. E-comic learning media is a learning media that is favored by students, this is because in e-comic learning media there is material accompanied by interesting images, so it is easy for students to understand. Interesting media will foster student motivation to learn [4].

Based on the results of observation and needs analysis at SMAN 6 Bengkulu City and SMAN 8 Bengkulu City which shows that students and teachers have not used e-comic-based teaching materials. Most of the students have difficulty in understanding the subject matter and some teachers have difficulty finding suitable learning media for learning at home, so they need other additional teaching materials that can help students to be able to understand the subject matter. The creation of this e-comic-based learning media was carried out using the Photoshop application and the Flip PDF Corporate application. The Photoshop application is used to create image media and materials on e-comic teaching materials, while the Flip PDF Corporate application is used to make the appearance of teaching materials into electronic comics in the form of flipbooks. In this e-comic teaching material, there is not only material but there are also color images that are interesting and not boring.

The use of learning media in the learning process is a part that must be considered by the teacher as a facilitator in every learning process. Therefore, educators are required to be able to learn how to choose and determine the right learning media so that learning objectives can be achieved. Learning outcomes are abilities obtained by students after going through learning activities at school. The abilities acquired by students are expected to achieve the desired goals [5]. The learning resources used are essentially anything that is used to provide subject matter so that students experience the learning process. The definition of learning resources is something that can be used for the learning process. Good and interesting learning resources will increase students' motivation to learn [6].

The learning motivation that students have can be increased by the presence of interesting learning media. Interesting learning media can increase students' attractiveness to learning. One of the learning media that can increase student learning attractiveness is the learning media E-Comics (Electronic Comics) [7]. This E-Comic learning media is a learning media that is much loved by students, this can be seen from the results of previous studies that concluded that reading comics or picture books can attract students' attention so that it can cause a good thinking imagination for students [8].

This study aims to determine the perception and feasibility of E-Komik-based learning media. Perception is a cognitive process that allows a person to understand stimuli from the environment. These stimuli affect all the senses : sight, touch, taste, smell and hearing [9]. Therefore, researchers develop E-Comic-based learning media in physics lessons so that they can be used as a reference for teachers to develop learning media to increase student interest and learning outcomes. Based on the above problems, the researcher made a development entitled "Development of E-Comic-Based Learning Media on Large Materials and Units to Increase Student Learning Motivation".

B. Research Methods

The method used in this study is the research and development (R&D) method, which is a development research in learning media. R&D research method can be interpreted as a scientific method for researching, designing, and validating the final product [10]. This study also used the ADDIE model. Model ADDIE has 5 stages, namely the Analysis, Design, Development, Implementation, and Evaluation stages. The development of the ADDIE model in this research is carried out only until the Implementation stage [11].

This research was conducted in two public high schools, namely SMA N 6 Kota Bengkulu and SMA N 8 Kota Bengkulu. The sampling population of the study was carried out on grade 10 students, teachers, and lecturers. The development of this learning media was made as an alternative to the impact of COVID-19 that has hit the world today, especially the world of education. The data collection instrument used is a questionnaire instrument that will be analyzed to determine the feasibility and perception of students as an E-Comic-based learning medium to be suitable for application in schools. The feasibility questionnaire instrument was filled by physics lecturers at Bengkulu University and high school teachers with three aspects of assessment, namely material aspects, language aspects, and media aspects. The interval data obtained from the calculation results of each item of the questionnaire instrument statement will be calculated the percentage of answers in each item using the following formula:

$$P = n/N \times 100\%$$

Where P is the percentage of validation test results, n is the total score of the expert assessment, and N is the maximum score possible to obtain [12]. After obtaining the percentage of the score of each question using the formula, the percentage of eligibility obtained from the interpretation in the eligibility category is obtained based on the following table:

Table 1. Interpretation of Assessment Scores

Percentage (%)	Criterion
0% - 20%	Very Less Viable
21% - 40%	Less Viable
41% - 60%	Decent Enough
61% - 80%	Proper
81% - 100%	Very Worthy

From these criteria, learning media can be said to be feasible if the percentage $\geq 60\%$ of all existing aspects [13]

C. Result and Discussion

The development of e-comic-based learning media on large and unit materials is an RnD research and uses the ADDIE model. The product developed is in the form of e-comics which are expected to increase student motivation to learn on large and unit materials.

1. Needs Analysis Stage

The analysis stage is carried out to obtain data as a first step of development. Information data collection is obtained from field surveys, and needs analysis. The field survey was conducted by means of observation, interviews, and distribution of needs questionnaires in 2 high schools, namely SMAN 6 Bengkulu City and SMAN 8 Bengkulu City. The results of observations, interviews and needs questionnaires, the results of the analysis of student and teacher needs were obtained, namely: 1). During the learning process, the media used by teachers for the learning process were printed books, modules, ppt, LKPD. 2). Erratic learning systems are sometimes online, sometimes offline making it difficult for students to understand the learning material. 3). Students and teachers need learning media that can attract students' motivation to learn.

The results of the needs analysis in 2 high schools obtained results of 76.04% for students and 85.23% for teachers. The two schools can be categorized as strongly agreeing with the development of e-comic-based learning media to increase student learning motivation on large and unit materials.

2. Design Stage

This stage is carried out after carrying out the analysis stage, the results obtained from this stage are: This e-comic-based learning media is emphasized to be able to increase student motivation to learn physics subjects. This e-comic-based learning media consists of 2 parts, the first part is the introductory part, which can be seen in figure 1.

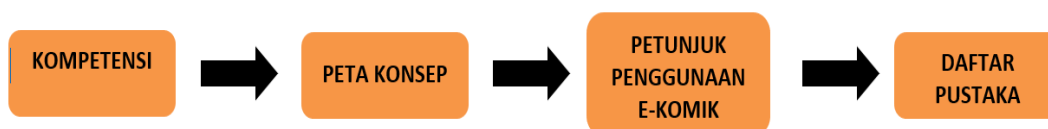


Figure 1. Product Design Section Introduction

And here is the second part, which is the interactive learning media section, which can be seen in figure 2.

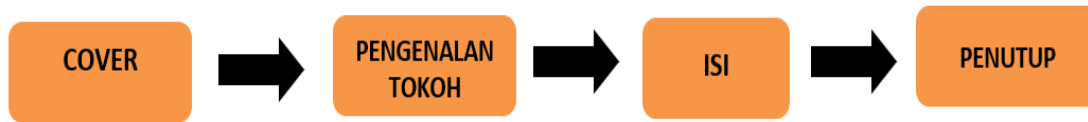


Figure 2. Product Design Core Parts

3. Development Phase

The e-comic teaching material products that have been developed can be seen in the picture

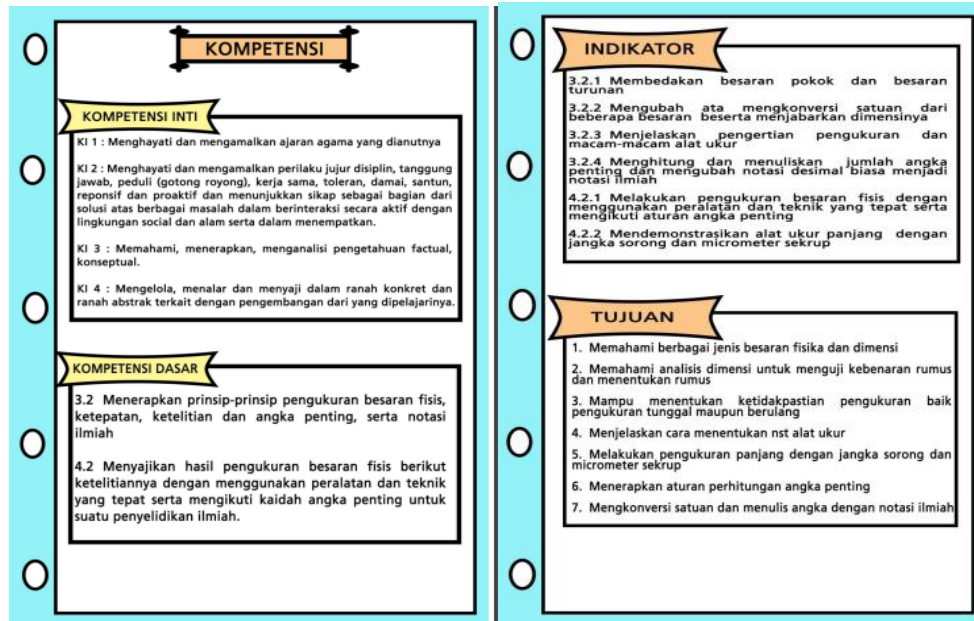


Figure 3. Competency Display, Indicators And E-Comics Goals

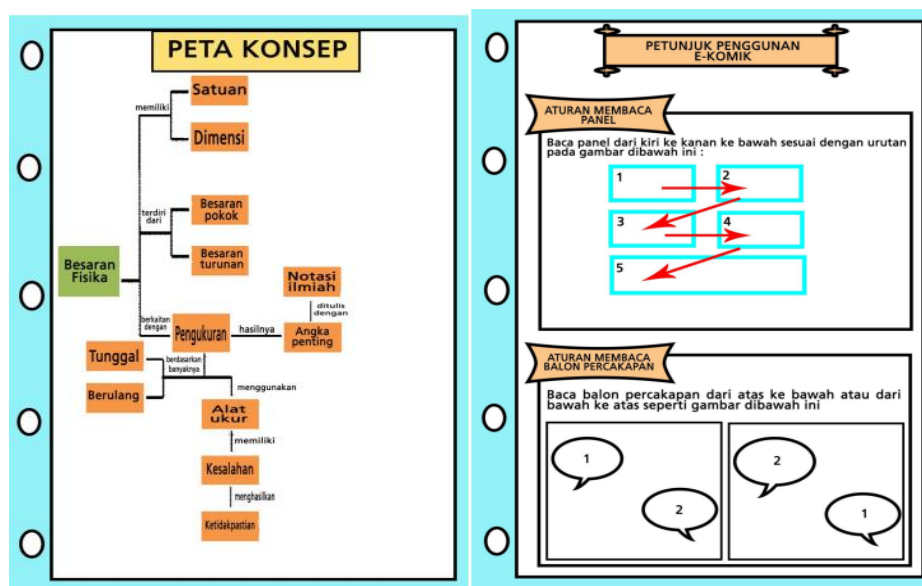


Figure 4. Concept Map View and E-Comic Instructions for Use

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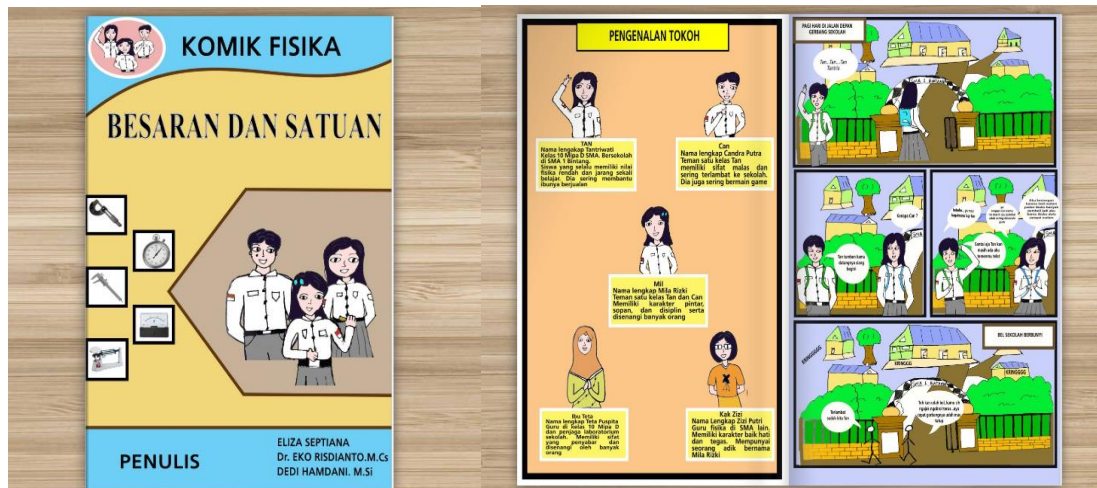


Figure 5. Cover Look and Introduction Store introduction

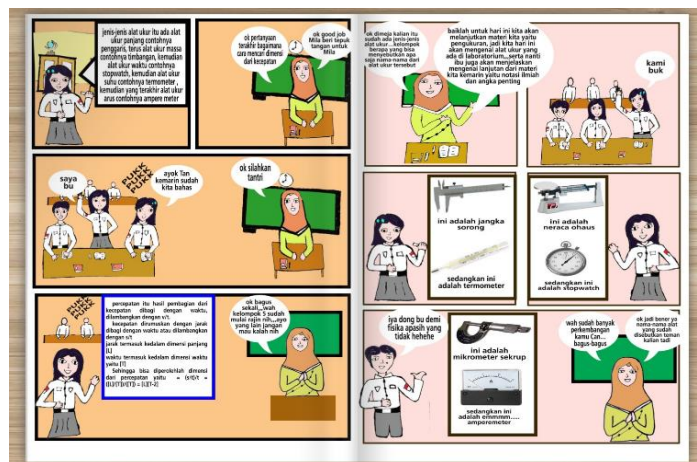


Figure 6. Display of Learning Activities



Figure 7. Learning Motivation Display and E-Comic Final Look

4. Implementation Phase

The results of product design and development at the design and develop stage are validated by three validators to determine the feasibility of their use in the physics learning process. The results of the validation of each aspect of the statement, namely the material aspect, the language aspect, and the media aspect can be seen in the following table:

Table 2. Final Results of E-Comic Feasibility Interpretation By Expert

Aspects	Interpretation	Category
Material	92,5%	Very Worthy
Language	90%	Very Worthy
Media	82,4%	Very Worthy
Learning Motivation	77,08%	Proper
Average	90%	Very Worthy

From the results of the feasibility test on material aspects, language aspects, and media aspects on the development of E-Comic learning media on the Material of Magnitude and Units to Increase Student Learning Motivation with 3 expert judgments, namely 1 Physics Education Lecturer at Bengkulu University and 2 Teachers of SMA N 8 Bengkulu City obtained very decent results with a percentage of 90%.

This study aims to determine the results of the feasibility validation test and students' perceptions of E-Comic-based learning media on quantity and unit materials. In the development of E-Comic-based learning media, an R&D research method with the ADDIE model is used. The research stages that have been carried out on E-Comic-based learning media are: 1). Analysis which is an analysis of the needs of teachers and students for this E-Comic-based learning media; 2). Design which is a stage of data collection, designing and making learning media designs; 3). Development is the stage of developing learning media that has been designed; 4) implementation is the stage used to determine the feasibility of the learning media developed.

Based on the results of the average percentage of feasibility validation tests from material aspects, language aspects, and media aspects carried out by 3 expert judgements, it can be concluded that E-Comics (electronic comics) of material of magnitude and units to increase student learning motivation developed can be categorized as very feasible with a percentage of 90% of 100%. This means that E-Comic learning media (electronic comics) have fulfilled every aspect of feasibility, namely material aspects, language aspects, and media aspects. From the results of the feasibility test that has been given by the validator on the E-Komik learning media, it can be categorized as very feasible with revisions to the product. Then from the results of the perception test, students who obtained an average percentage of 78.94% and were categorized as good.

The results of this study are in line with the research "Toondoo Application Based On Contextual Approach: Development Of Comic Learning Media" shows that physics comic learning media using the Toondoo application based on a contextual approach on the subject matter of circular motion, getting a feasibility percentage result of 94.19% with a very decent category. The size of every aspect obtained is the media aspect of 89.46% with the very decent category, the language aspect of 83.33% with the very decent category, the assessment of high school educators 88.59% with the very interesting category, and the student assessment of 86.01% with the very interesting category. Based on the results obtained, it is concluded that this physics comic learning media is feasible and interesting to use [14]. This research is also relevant to the research "Development of Android-Based Comic Media on the Subject of Straight Motion" which shows that the development of this android-based comic media obtained a presentation score of 79.62% material expert validation results with a decent category, and the presentation of media expert validation results of 81.7%, and can be categorized as very feasible, so this android-based learning media can be said to be very feasible to use [13]. In addition, this research is also in line with the research "Student Perceptions of the Readability of Digital Comic Learning Media Based on a Contextual Approach to Increase Learning Motivation in Optical Tools Material" which shows that based on the overall average results of the questionnaire data student perceptions of the readability of digital comic learning media based on a contextual approach to increase learning motivation on the material of optical tools are on the criteria

very good which includes aspects of appearance, presentation of material, and benefits, so it can be concluded that this learning media can be an alternative in helping to increase learning motivation in learning physics [15].

D. Conclusion

Based on the results and discussion, it can be concluded that E-Comic-based learning media on the material of magnitude and units to increase student learning motivation can be said to be very feasible to use with an average percentage of 90%. Based on the results of students' perceptions of E-Comics carried out in two schools, namely at SMAN 8 Bengkulu City and SMAN 6 Bengkulu City, it can be said to be good with an average percentage of 78.94%.

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